Having thus described the preferred embodiments, the invention is now claimed to be:

1. A method of manipulating a cell comprising:

a) delivering at least one cell to a liquid medium which extends over a surface;

b) applying a first fluid flow to the liquid medium from a first direction which moves the cell in a first direction on the surface; and

c) applying a second fluid flow to the liquid medium from a second direction angularly spaced from the first direction which moves the cell in a second direction on the surface.

2. The method of claim 1, further including, prior to steps b) and c), allowing the at least one cell to settle on the surface.

3. The method of claim 1, further including:

repeating steps (b) and (c) as necessary to position the cell on a preselected site on the surface.

4. The method of claim 3, wherein the site is more hydrophilic than an adjacent area of the surface over which the cell is manipulated to the site.

5. The method of claim 3, further including, after the step of positioning the cell on the site:

d) cleaning other cells from the adjacent area of the surface.

6. The method of claim 5, wherein step d) includes:

applying at least one of the first and second fluid flows to move the other cells away from the site.

7. The method of claim 5, further including, prior to step d):

allowing an attachment time to elapse which is sufficient for the cell to attach to the site.

8. The method of claim 7, wherein the attachment time is up to about 5 minutes.

9. The method of claim 1 wherein step (b) includes delivering a fluid from a first fluid outlet and step c) includes delivering a fluid from a second fluid outlet into the liquid medium.

10. The method of claim 9, wherein the fluid includes a liquid.

11. The method of claim 9, wherein the step of delivering includes operating a first delivery device fluidly connected to a first tube which defines the first fluid outlet and operating a second delivery device fluidly connected to a second tube which defines the second fluid outlet.

12. The method of claim 11, wherein the step of operating includes depressing a syringe.

13. The method of claim 11, wherein an outlet end of each of the tubes is arranged generally parallel with the surface.

14. The method of claim 3, wherein the surface is defined by a platform, the platform including at least one of:

an electrode positioned adjacent the site for performing an electrochemical measurement on the cell; and

an optical sensor positioned adjacent the site which exhibits a change in an optical property in response to a change in a local concentration of a chemical species.

15. The method of claim 1, wherein at least one of the first and second fluid flows has an average velocity which is at least ten times a velocity at which the cell moves in at least one of steps b) and c).

16. The method of claim 15, wherein the first and second fluid flows each have an average velocity which is at least about 100 times the velocity at which the cell moves in steps b) and c).

17. A system for manipulation of a cell comprising:

a platform which defines a surface having a site at which the cell has a higher probability of attachment in a period of time than an adjacent area of the surface;

first means for selectively delivering a fluid to a first fluid outlet located adjacent the surface, the first outlet being oriented to provide a first fluid flow in a first direction in a liquid medium on the surface;

second means for selectively delivering a fluid to second fluid outlet located adjacent the surface, the second outlet being oriented to provide a second fluid flow in a second direction, angularly spaced from the first direction, in the liquid medium on the surface, whereby by actuation of the first and second delivery devices, a cell can be navigated across the adjacent area through the liquid medium to the site.

18. The system of claim 17, wherein the site is less than 100 micrometers in diameter.

19. The system of claim 18, wherein the site is less than about 30 micrometers in diameter.

20. The system of claim 17, wherein the site is defined by a layer of at least one of silicon and an oxide thereof.

21. The system of claim 17, wherein the site is generally at an intercept of the first and second fluid flows.

22. The system of claim 17, wherein the first means for delivering a fluid includes a first syringe fluidly connected with a first tube which defines the first outlet and the second means for delivering a fluid includes a second syringe fluidly connected with a second tube which defines the second outlet.

23. The system of claim 17, wherein the first and second fluid flows are generally orthogonal.

24. The system of claim 17, wherein the site is surrounded by the adjacent area.

26. The system of claim 17, wherein the site is spaced from the outlets by a distance of from about 1-10mm.

27. The system of claim 17, further including: means for observing movement of cells to the site.

28. The system of claim 27, wherein the observing means includes at least one of a microscope and a CCD video camera.

29. The system of claim 17, wherein the platform further includes:

at least one electrode located adjacent the site, for performing an electrochemical measurement which is influenced by a cell attached to the site.

30. The system of claim 17, further including optical monitoring equipment for detecting changes an optically detectable property of a cell attached to the site.

31. The system of claim 17, further including:

a container which receives the platform;

a liquid medium disposed in the container and covering the platform and the first and second outlets.

32. A system for performing an electrochemical measurement on a cell, the system including:

a platform which defines a surface and at least one electrode positioned for performing an electrochemical measurement which is influenced by a cell located on the surface adjacent the electrode;

a first tube positioned to supply a liquid to a liquid medium on the surface toward the electrode in a first fluid flow direction;

a second tube positioned to supply a liquid to the liquid medium on the surface toward the electrode in a second fluid flow direction; and

means for selectively controlling fluid flow to the first and second tubes.

33. A method for forming a cell manipulation system comprising:

connecting a first syringe to a first tube;

connecting a second syringe to a second tube;

positioning an outlet of a first tube in a liquid medium adjacent an upper surface of a platform in a first orientation, the platform defining region of interest comprising a site for attachment of a cell and an area surrounding the site at which a probability of a cell attaching is less than that at the site;

positioning an outlet of a second tube in the liquid medium adjacent the upper surface of the platform in a second orientation, such that fluid flows from the first and second tubes intercept at the region of interest, whereby by selectively actuating the first and second syringes, a cell located in the liquid medium in the region of interest is navigated to the site.